

Notice of Allowability	Application No.	Applicant(s)	
	10/716,275	CHOI, JAE-KWON	
	Examiner	Art Unit	
	Tom V. Sheng	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 1/18/2007.
2. ☒ The allowed claim(s) is/are 4-9, 12-16 and 18.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____ |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

Cancel claims 1-3.

Allowable Subject Matter

2. Claims 4-9, 12-16 and 18 are allowed.

3. The following is an examiner's statement of reasons for allowance:

The invention is a reset circuit, including a filtering circuit, of a timing controller used in a liquid crystal display. Specifically, the reset circuit deals with a digital power-on signal and outputs a reset signal such that the GOE signal (to the gate driver) is masked for at least 16 msec and the impulse(s) of the clock signal (to the source driver) is reduced. The reset circuit is designed to use with Low Voltage Differential Signaling (LVDS) and two-diode type electrostatic protection circuits.

Independent claim 4 identifies, inter alia, the uniquely distinct features "the filtering circuit permitting a gate operation enable (GOE) mask time of a GOE signal applied to a gate driver of the liquid crystal display device to be longer than about 16 msec and reducing an impulse of a clock signal applied to a source driver of the liquid crystal display device."

Independent claim 7 identifies, inter alia, the uniquely distinct features “a filtering circuit connected to the reset circuit, the filtering circuit permitting a GOE mask time of the GOE signal to be longer than about 16 msec and reducing an impulse of the clock signal.”

Independent claim 16 identifies, inter alia, the uniquely distinct features “a filtering unit to permit a masking of the operation signal for a time duration compatible with inducing a first driver operation involving substantially reduced image interferences, and to reduce an impulse of the timing signal wherein the time duration of the masking of the operational signal is longer than about 16 msec.”

Independent claim 18 identifies, inter alia, the uniquely distinct features “filtering the additional signal to permit a masking of the operation signal for a time duration compatible with inducing a first driver operation involving substantially reduced image interferences, and to reduce an impulse of the timing signal wherein the time duration of the masking of the operational signal is longer than about 16 msec.”

Koga et al. (US 6,894,673), hereinafter Koga, teaches a liquid crystal display having a gate driver, source driver and LCD control circuit. The LCD control circuit provides a gate driver output enable signal VOE to the gate driver and a data latch pulse DLP to the source driver. A rise detection circuit for detecting is data enable signal is used to provide a HRST reset signal to the LCD control circuit. The duration of the VOE signal between frames is determined by a tx value detected. However, Koga does not teach above claimed features on masking time and impulse reduction.

Hiraga et al. (JP 2001-100175), hereinafter Hiraga, teaches a liquid crystal display having a signal processing circuit and a preceding signal receiving circuit. Upon a power start-up, the signal processing circuit would start power source start-up sequence after the operation of the signal receiving circuit has been stabilized. However, Hiraga does not teach above claimed features on masking time and impulse reduction.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom V. Sheng whose telephone number is (571) 272-7684. The examiner can normally be reached on 9:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2629

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tom Sheng

AMR A. AWAD
SUPERVISORY PATENT EXAMINER

A handwritten signature in black ink, appearing to read "Amr A. Awad", with a large, sweeping flourish at the end.